



1288.43131X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Shinji KIMURA et al.

Serial No.: 10/663,700

Filed: September 17, 2003

For: CACHE CONTROL METHOD FOR NODE APPARATUS

Group: 2186

Examiner: Not yet assigned

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.97 & 1.98**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

December 29, 2004

Sir:

In the matter of the above-identified application, Applicants are submitting herewith a search report and copies of the documents listed in the attached form equivalent to Form PTO-1449 for the Examiner's consideration.


This information disclosure statement is being submitted before the mailing date of a first office action on the merits.

Each of the documents listed on the attached form equivalent to Form PTO-1449 is in the English language.

It is respectfully requested that this information disclosure statement be considered by the Examiner.

Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Mattingly, Stanger & Malur, Deposit Account No. 50-1417 (referencing attorney docket no. 1288.43131X00) please credit any excess fees to such deposit account.

Respectfully submitted,



Frederick D. Bailey
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FORM PTO-1449 U.S. Department of
Commerce (Rev. 4/92) Patent and Trademark
Office

ATTY. DOCKET NO.

1288.43131X00

SERIAL NO.

10/663,700

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use several sheets if necessary)

APPLICANT

Shinji KIMURA et al.

FILING DATE

September 17, 2003

GROUP

2186

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,423,019	06-1995	LIN			
	5,452,447	09-1995	NELSON et al.			
	5,860,107	01-1999	PATEL			
	6,799,244	09-2004	TANAKA et al.			
	2003/0009640 A1	01-2003	ARIMILLI et al.			
	2003/0074525 A1	04-2003	YAMAUCHI et al.			
	2003/0188085 A1	10-2003	ARAKAWA et al.			
	2004/0034746 A1	2-2004	HORN et al.			
	2004/0123049 A1	06-2004	CYPHER et al.			
	2004/0123068 A1	06-2004	HASHIMOTO			
	2004/0186898 A1	09-2004	KIMURA et al.			

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	ABSTRACT	
					YES	NO
EP 0 886 216 A1	12-1998	Europe				
EP 0 509 676 B1	10-1992	Europe				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Networking Caching Technologies, Internetworking Technologies Handbook, Chapter 53.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation is considered, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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October 29, 2004

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ATTORNEY CLIENT INFORMATION**

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RE: Petition-To-Make-Special Search
For: **CACHE CONTROL METHOD FOR NODE
APPARATUS**
Your Ref. No.: 340300340US01
Our Ref. No.: HIT 1135

Dear Mr. Otsuka:

We have completed the petition-to-make-special search at the U.S. Patent and Trademark Office regarding the above-identified invention. The field of search covered Class 711, subclasses 138 (U.S. & Foreign) and 139 (U.S. & Foreign). Additionally, Additionally, a computer database search was conducted on the USPTO systems EAST and WEST for U.S. and foreign patents; a keyword search was conducted in Class 711, subclasses 113, 154, 170 and 203; and a literature search was also conducted on the internet and commercial databases for relevant non-patent documents. Examiner Kevin Ellis in Class 711 (Art Unit 2188) was consulted in confirming the field of search.

The search was directed towards a cache control method for node apparatus. In particular, the search was directed towards claims 1-19 of U.S. Application Number 10/663700 and U.S. Patent Application Number 2004/0186961. The claims describe a cache control method in a computer system, in which a storage device, a node device including a disk device for cache and clients are connected together, for controlling the cache in the disk device, comprising the steps of; sending attribute information of data to the node device in the storage device or the client; in the node device, judging as to whether or not the data to be relayed is allowed to be cached in the disk device; and relaying the data which has been judged as non-cacheable. A node device that includes a disk device for cache and relays transmission and receipt of data between a storage device and clients, comprising an attribute information input module, a judgment module, and a cache control module. A storage device that provides a client with data via a node device including a disk device comprising, an

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attribute information management module. A data source device that provides other computers with data via a node device including a disk device for cache comprising, a judgment module, and a transmission control module. A computer readable recording medium in which a computer program is recorded, the computer program causing a computer to control operations of a node device that includes a disk device for cache and relays data between a storage device and clients, the computer program causing the node device to attain the functions of means for inputting attribute information, means for judging as to whether or not the data is cacheable, and means for relaying the data, and as further claimed in the disclosure.

Please note the enclosed documents listed in numerical order for convenience:

<u>U.S. Patent Number</u>	<u>Inventor(s)</u>
5,423,019	Lin
5,452,447	Nelson et al.
5,860,107	Patel
6,799,244	Tanaka et al.*
<u>Published Patent Application</u>	<u>Inventor(s)</u>
2003/0009640	Arimilli et al.
2003/0074525	Yamauchi et al.
2003/0188085	Arakawa et al.*
2004/0034746	Horn et al.
2004/0123049	Cypher et al.
2004/0123068	Hashimoto
2004/0186898	Kimura et al.
<u>Foreign Patent Number</u>	<u>Inventor(s)</u>
EP 0509676	Mirza
EP 0886216	Shiell

*Patents assigned to Hitachi

Non-Patent Literature:

“Network Caching Technologies”, source(s): Internetworking
Technologies Handbook

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Brief Description Of The Documents:

U.S. Patent Application Number 2004/0186898 (Kimura et al.) shows a disk device, including a share volume with specified capacity that is used in common among the plurality of clients, and a plurality of specific volumes that are segmented one another, each of which is associated with one of the plurality of clients. The data source device may be applied to a computer system with a node device that is connected between the data source device and the plurality of clients and relays the data between them. The data being relayed is cached in the disk device in the node device. The data stored in the share volume and the data stored in the specific volume on the data source device are preferably processed separately in the case of the node device. The data source device may output specific information to the node device, wherein the specific information is used to judge the volume in which respective data are stored, and the share volume or the specific volume. See figures and summary.

U.S. Patent Application Number 2003/0009640 (Arimilli et al.) shows a non-uniform memory access (NUMA) data processing system comprising a plurality of non-cacheable indicators that are each associated with a respective one of plurality of nodes, wherein a set non-cacheable indicator instructs the at least one processing unit in the associated node to not cache data associated with non-physical addresses within the group. See figures, summary and claims 1-5.

U.S. Patent Application Number 2004/0123068 (Hashimoto) shows a computer system, comprising a disk drive control block (408) for controlling the disk drives (122-125) according to the I/O commands from the host processor (101), and a disk cache control block (409) for controlling the data stored in the disk caches (119, 120) and makes cache hit/miss judgment or the like. See figures, summary and [0071]-[0077].

U.S. Patent Numbers 5,423,019 (Lin), 5,452,447 (Nelson et al.), 5,860,107 (Patel), 6,799,244 (Tanaka et al.), U.S. Patent Application Numbers 2003/0074525 (Yamauchi et al.), 2003/0188085 (Arakawa et al.), 2004/0034746 (Horn et al.), 2004/0123049 (Cypher et al.), and European Patent Numbers EP509676 (Mirza), and EP 886216 (Shiell et al.) show a cache control and node apparatuses.

While the above-noted Examiner was consulted and confirmed our opinion that the most relevant areas for this invention were reviewed, further searching may uncover additional patents. NOTE: The field of search included the most pertinent areas identified by the Examiner and our office as containing relevant patents.



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Enclosed are copies of the cited documents and our invoice for services rendered and disbursements for this matter. NOTE: Japanese publication Number JP 06-332716, JP 2001-75853 and JP 2000-259583 included in the search request have not been included in this search report.

As always, if you have any questions regarding this search, please do not hesitate to call us at (703) 413-5000.

Very truly yours,

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TWK/RCP/nsa
Enclosure



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